CAIR / CAMR Implementation Workgroup

Meeting #1

May 12, 2005

Overview

- Federal Rules
  - Clean Air Interstate Rule (CAIR)
  - Clean Air Mercury Rule (CAMR)
  - SIP revisions due to EPA in September, 2006

Overview

- Requirements
  - CAIR
    - Meet annual SO2 emission targets
    - Meet annual NOX emission targets
    - Meet “ozone season” NOX emission targets
  - CAMR
    - Meet annual Hg emission targets

Overview

- Generalities
  - Rules directed at Electrical Generating Unit's
    - CAIR design based on EGU controls
      - SO2 and NOX emission targets must be met
      - Trading program for EGU's*
      - Non-EGU approaches are resource intensive
    - CAMR applies only to EGU's
      - Emission target must be met by EGU's

CAIR EGU Definition

- Electric generating unit or EGU means:
  - (1) Except as provided in paragraph (2) of this definition, a stationary, fossil-fuel-fired boiler or stationary, fossil fuel fired combustion turbine serving at any time, since the start-up of a unit's combustion chamber, a generator with nameplate capacity of more than 25 MWe producing electricity for sale.
  - (2) For a unit that qualifies as a cogeneration unit during the 12-month period starting on the date the unit first produces electricity and continues to qualify as a cogeneration unit, a cogeneration unit serving at any time a generator with nameplate capacity of more than 25 MWe and supplying in any calendar year more than one-third of the unit's potential electric output capacity or 219,000 MWh, whichever is greater, to any utility power distribution system for sale. If a unit that qualifies as a cogeneration unit during the 12-month period starting on the date the unit first produces electricity but subsequently no longer qualifies as a cogeneration unit, the unit shall be subject to paragraph (1) of this definition starting on the day on which the unit first no longer qualifies as a cogeneration unit.

CAMR EGU Definition

- Electric generating unit or EGU means:
  - (1) Except as provided in paragraph (2) of this definition, a stationary, coal-fired boiler or stationary, coal-fired combustion turbine in the State serving at any time, since the start-up of a unit's combustion chamber, a generator with nameplate capacity of more than 25 megawatts electric (MW) producing electricity for sale.
  - (2) For a unit that qualifies as a cogeneration unit during the 12-month period starting on the date the unit 12 first produces electricity and continues to qualify as a cogeneration unit, a cogeneration unit in the State serving at any time a generator with nameplate capacity of more than 25 MW and supplying in any calendar year more than one-third of the unit's potential electric output capacity or 219,000 MWh, whichever is greater, to any utility power distribution system for sale. If a unit that qualifies as a cogeneration unit during the 12-month period starting on the date the unit first produces electricity but subsequently no longer qualifies as a cogeneration unit, the unit shall be subject to paragraph (a) of this definition starting on the day on which the unit first no longer qualifies as a cogeneration unit.

Overview

- Schedule
  - SIP revisions due in 18 months
    - ~September 2006
  - Less ~2 months for last minute SIP packaging...
    - ~July 2006
  - Less ~9 months for rulemaking process…
    - ~October 2005
- Need to be ready to start rulemaking this Oct.

SIP Definition

- **S**tate **I**mplementation **P**lan
  - Describes how the state will attain and maintain the National Ambient Air Quality Standards (NAAQS) and includes:
    - Rules
    - Permits
    - Administrative consent orders
    - Documentation
  - Must be federally approved
  - Federally enforceable

Overview

- Roles
  - Stakeholders
    - Develop rule implementation recommendations and assist in rule development / review
  - DNR
    - Facilitate by providing information and data, identifying necessary decisions and developing rule language

Meeting #1 - Goals

- Get Organized
  - Communications, process, schedule
- Get Smart
  - Background briefing, rule overviews
- Get Going
  - CAIR: EGU only or not (recommendation)
  - CAIR: Trading or not (recommendation)
  - CAMR: Trading or not (recommendation)

Questions / Comments?

Getting Organized

- Communications
  - Primary information distribution
    - http://www.iowadnr.com/air/prof/caircamr/index.html
  - Secondary information distribution
    - CAIR / CAMR Workgroup e-mail list

Getting Organized

- Process
  - Meeting goals / decision points established
  - Discussion
    - All input is valuable
    - No such thing as a stupid question
  - Consensus recommendations where possible
  - Separate recommendations where necessary

Getting Organized

- Process
  - Example
    - Meeting Goal: Allocation mechanism developed
      - Group X: Allocation Approach 1
      - Group Y: Allocation Approach 2
      - Group Z: Allocation Approach 3
    - When it appears consensus can not be reached, groups will be asked to develop written recommendations for the department
    - Members will review and and provide comments on each recommendation to the department

Getting Organized

- Schedule
  - Workgroup Start: May 12, 2005
  - Workgroup End: ~August, 2005
  - Meetings (3 to 6 anticipated):
    - Think about what will work best
      - Regularly scheduled
      - As needed, case by case

Questions / Comments?

Getting Smart

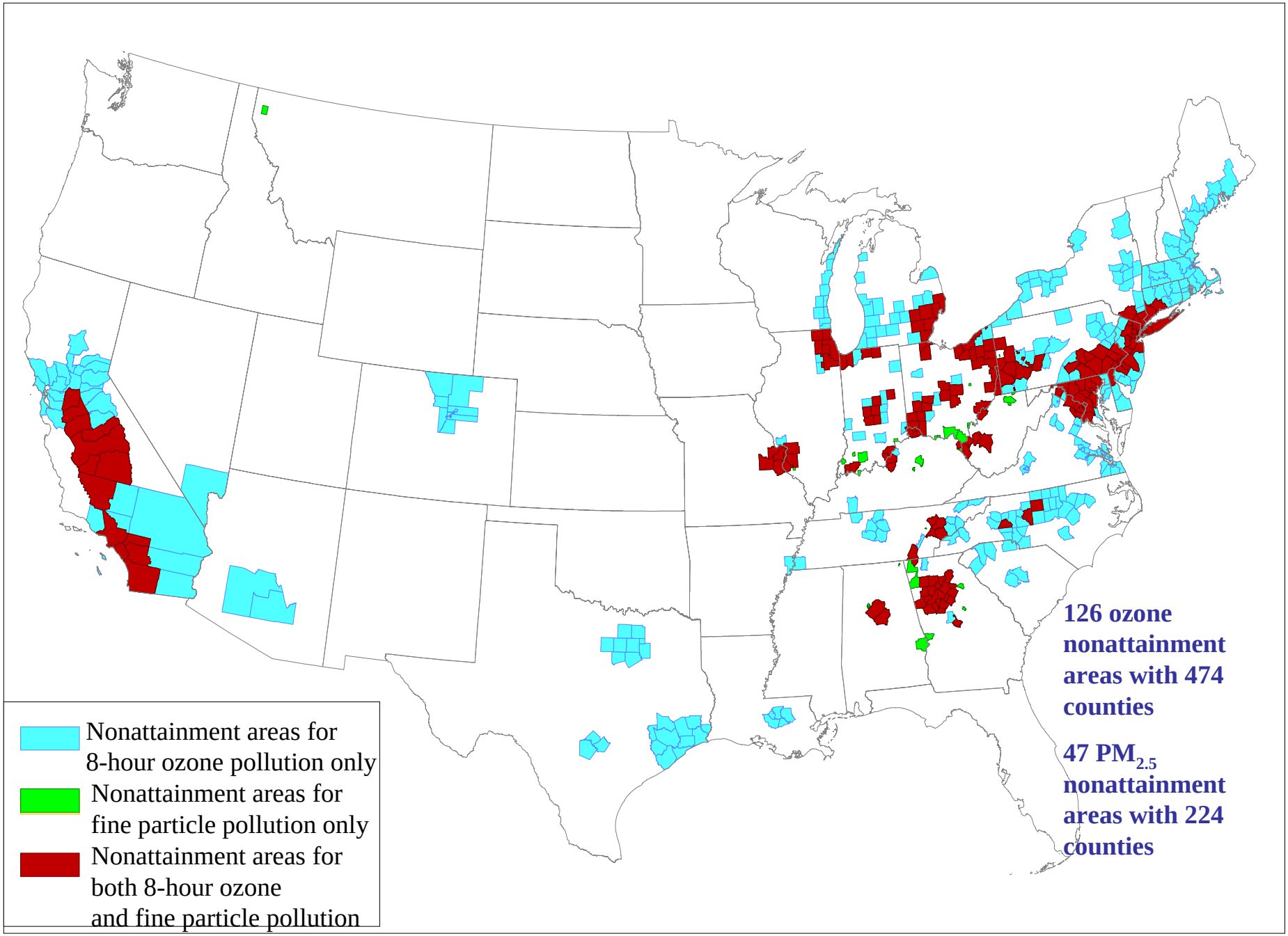
- Background
  - CAIR
    - CAA §110(a)(2)(D) - SIPs must prevent interference with attainment or maintenance of NAAQS downwind
    - Iowa 8-hour ozone & PM2.5 downwind impacts
  - CAMR
    - 1998 “Utility Study” mandated by CAA
    - December 2000 finding
    - March 2005 finding and rules

CAIR

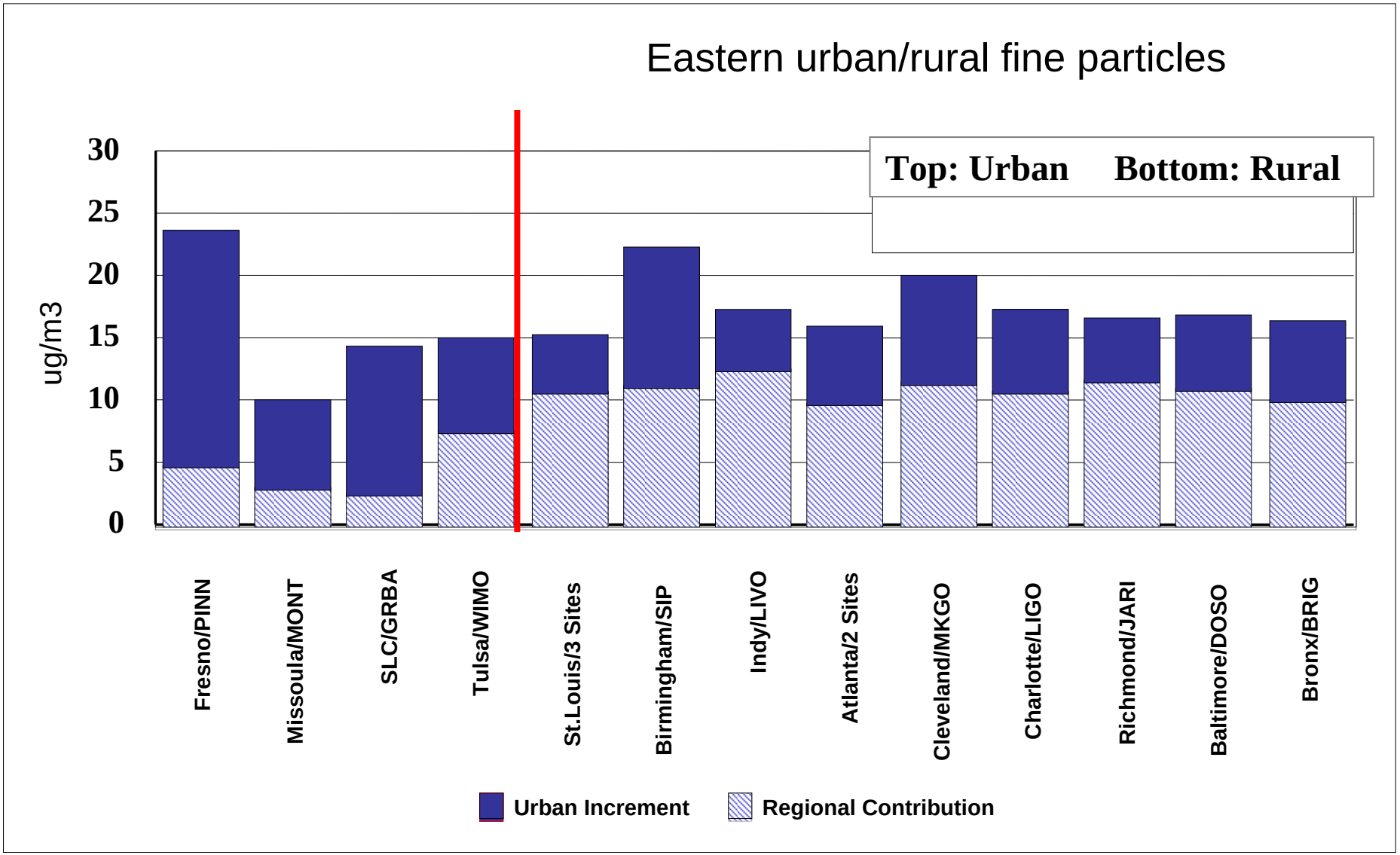
- Clean Air Interstate Rule
  - Requires NOX and SO2 emission reductions in most of the Eastern U.S. (based on EGU reductions)

	Phase I Reduction (from 2003)	**Phase II Reduction (from 2003)**
NOX	1.7 Million Tons	2.0 Million Tons
SO2	4.3 Million Tons	5.4 Million Tons

*NOX and SO2 are precursors to ozone and/or PM2.5 formation



Slide courtesy U.S. EPA



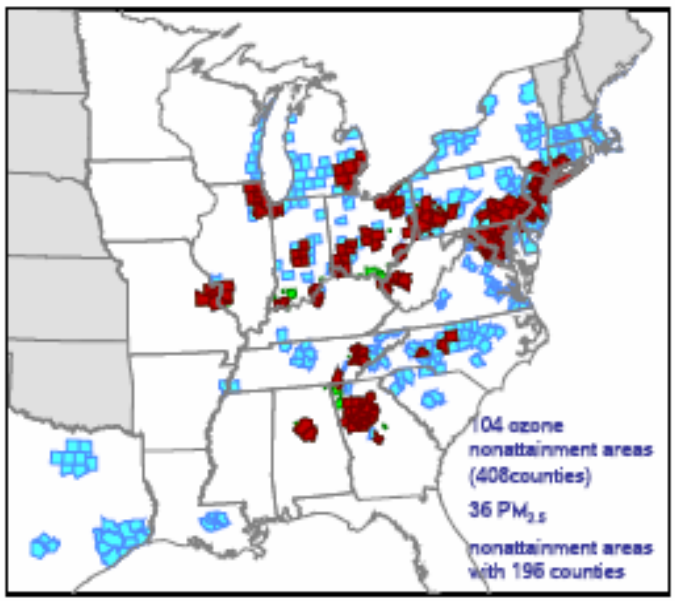
12-month average PM2.5 mass from speciation samplers

Reference: 2002 EPA Trends Report http://www.epa.gov/air/airtrends/chem_spec_of_pm2.5_b.pdf

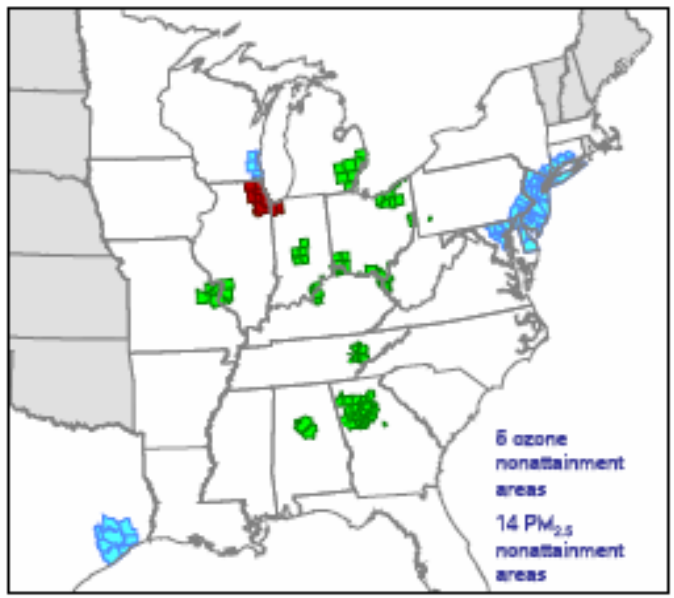
Slide courtesy U.S. EPA

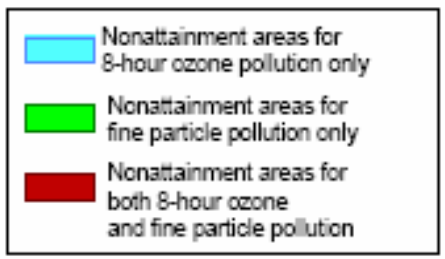
CAIR's Results

Ozone and Fine Particle Nonattainment Areas (April 2005)



Projected Nonattainment Areas in 2015 after Reductions from CAIR and Existing Clean Air Act Programs



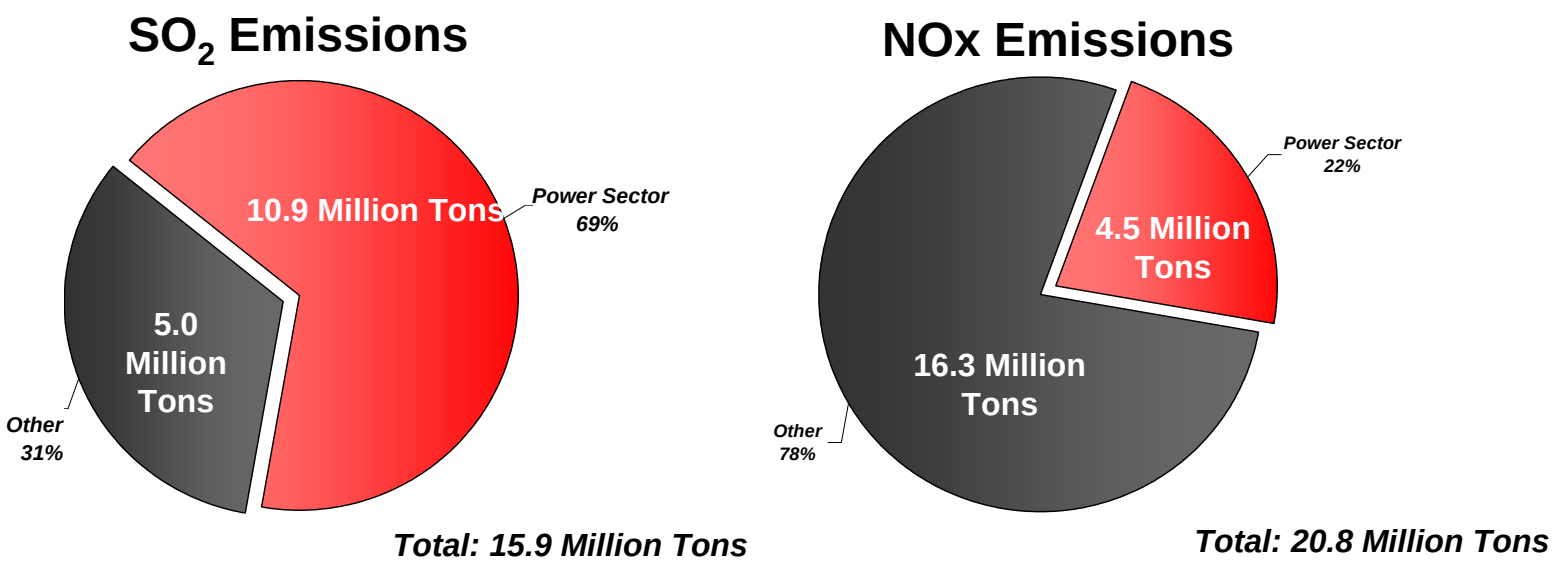


Projections concerning future levels of air pollution in specific geographic locations were estimated using the best scientific models available. They are estimations, however, and should be characterized as such in any description. Actual results may vary significantly if any of the factors that influence air quality differ from the assumed values used in the projections shown here.

Charts courtesy U.S. EPA

Emission Distribution

- CAIR – Based on EGU controls



Source: SO_2 and NOx data is from EPA's 2003 National Emissions Inventory. "Other" sources of pollutants include transportation and other mobile sources and industrial sources.

Charts courtesy U.S. EPA

Control Requirements

- CAIR
  - Controls for PM2.5 transport
    - Annual SO2 reductions
    - Annual NOX reductions
  - Controls for ozone transport
    - Ozone season NOX reductions

CAIR

NOX Compliance Requirements

(Part 51.123)

SO2 Compliance Requirements

(Part 51.124)

Annual NOX Trading Rules

(Parts 96.101-188)

Ozone Season NOX Trading Rules

(Parts 96.301-388)

SO2 Trading Rules

(Parts 96.201-288)

Emission Reporting Requirements

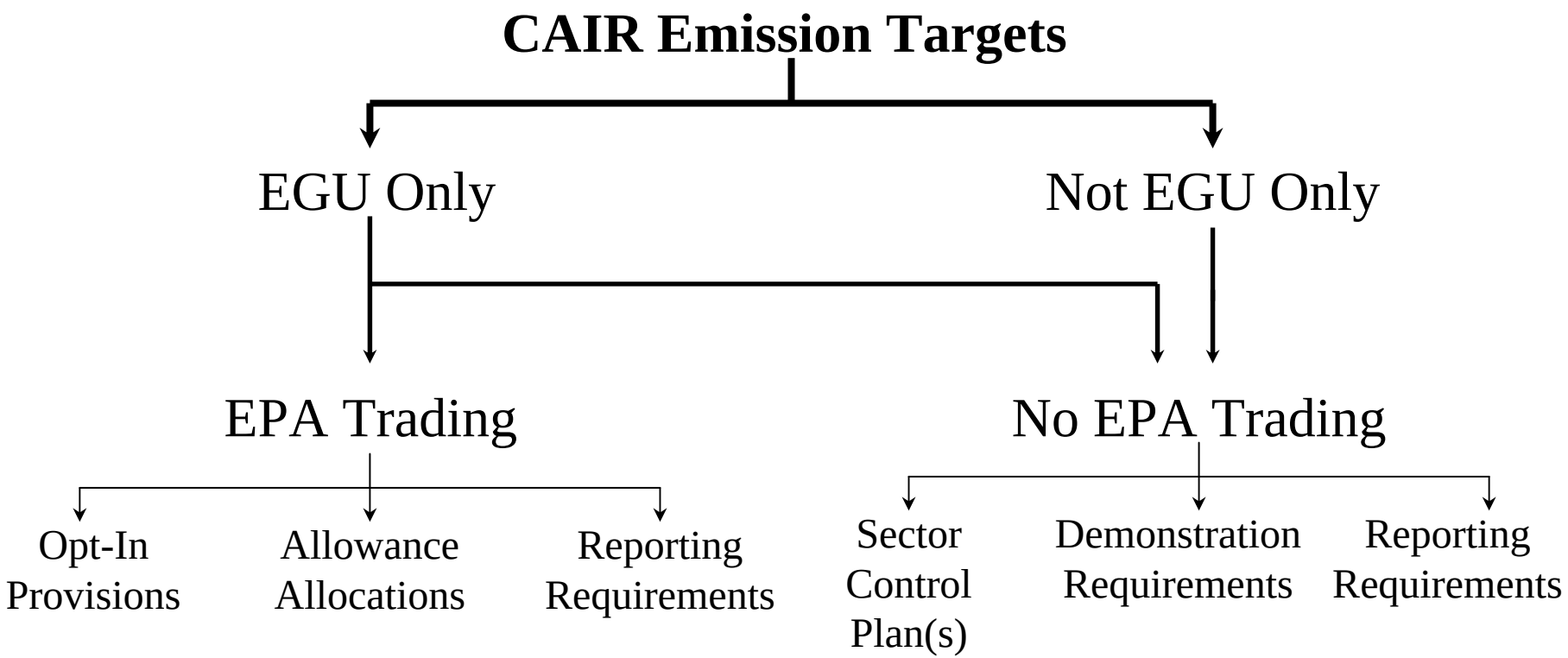
(Parts 51.122 & 51.125)

Acid Rain Changes

(Parts 72, 73, 74, 77, 78)

CAIR

- Rule overview



Questions / Comments?

CAMR

- Clean Air Mercury Rule
  - 1998 – Utility Study
    - Required by CAA
    - Reviews health hazards of HAP's from utilities
  - December 2000
    - EPA finding that it is "appropriate and necessary" to regulate coal and oil fired units under §112
  - March 2005
    - EPA revision - It is neither appropriate or necessary to regulate under §112
    - Will do so under §111, allow for a cap and trade program

CAMR

- Establishes standards of performance for new and existing coal fired utilities
- Establishes national cap on mercury emissions from coal fired utilities and provides for a cap and trade program
- No matter what - states must meet emission budgets

Mercury Emissions

(Coal fired EGU's)

Current: ~48 tpy

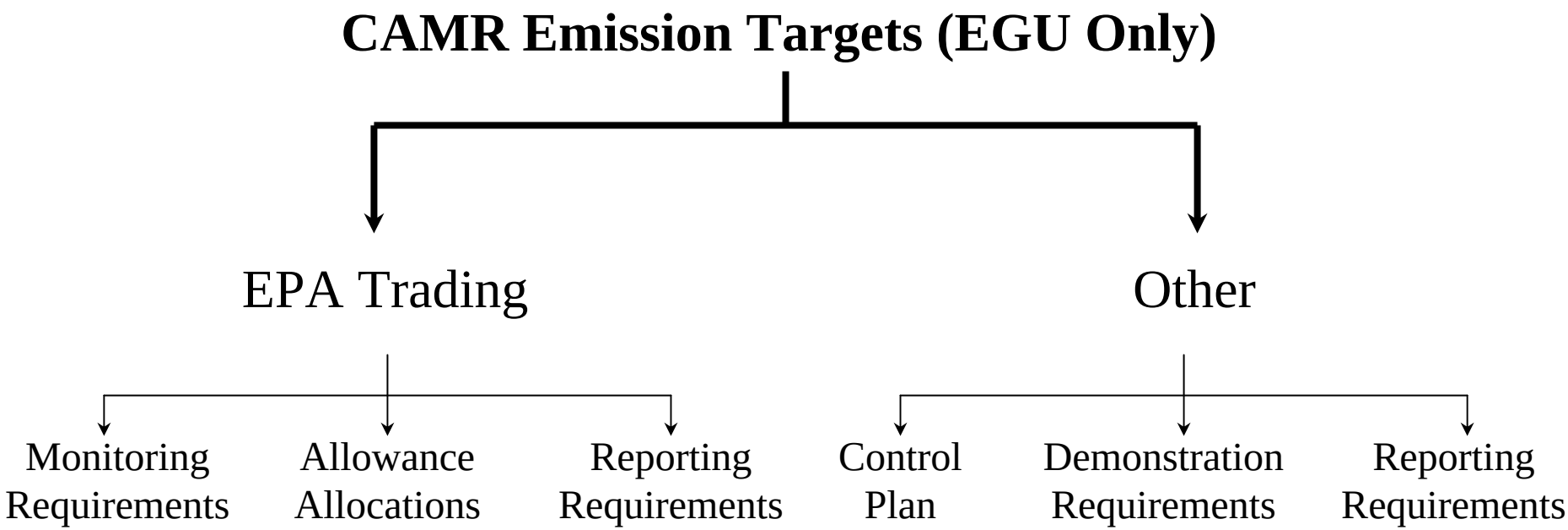
Under CAMR

2010: ~38 tpy

2018: 15 tpy

CAMR

- Rule overview



NSPS – Subpart Da

Questions / Comments?

Cap & Trade Overview

- Emissions Trading
  - Emission allowances are distributed to sources
  - Sources can trade or bank allowances
  - At the end of the year a source must have 1 allowance for each unit of actual emissions
  - Allowance price is determined by market forces

Cap & Trade Overview

- Compliance
  - Overall cap must be met, sources get to determine how to meet the cap.
    - Install control equipment, sell excess allowances
    - Buy allowances from the market, remain under controlled
    - Sources determine their compliance plan based on their needs and risk comfort levels
    - Failing to have enough allowances results in automatic penalties (3-1 allowance surrender, fines, etc.)

Cap & Trade Overview

- Examples
  - Acid Rain Program
  - NEOTC NOX Trading Program
  - NOX SIP Call
  - California's RECLAIM Program
  - Texas State Trading Program
- Possible implementation costs (§105 funds?)

Questions / Comments?

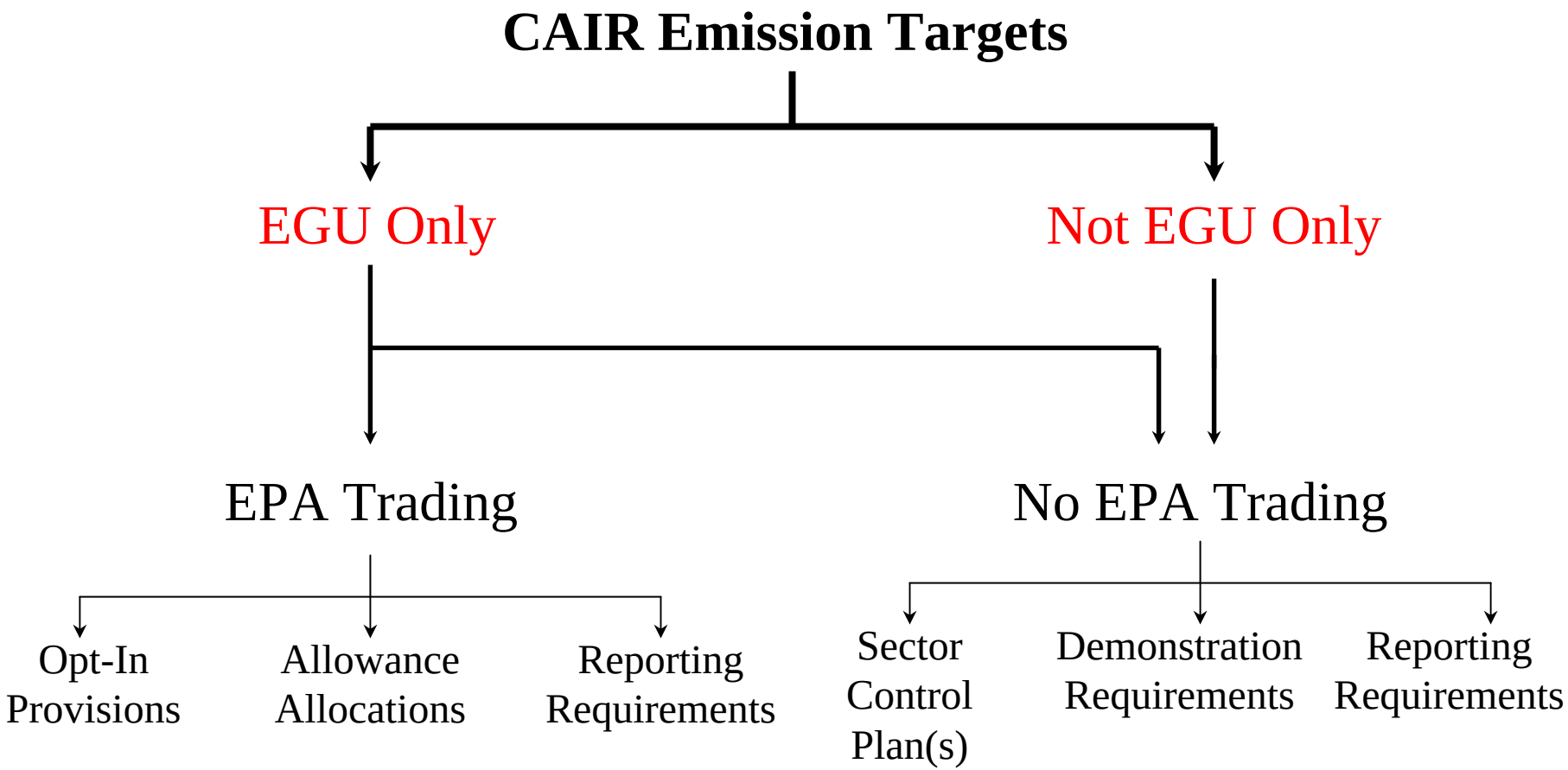
Getting Going

- Meeting #1 Goals
  - Consensus recommendations on the following aspects of the rules:
    - CAIR: EGU only or not
    - CAIR: EPA trading program or not
    - CAMR: EPA trading program or not

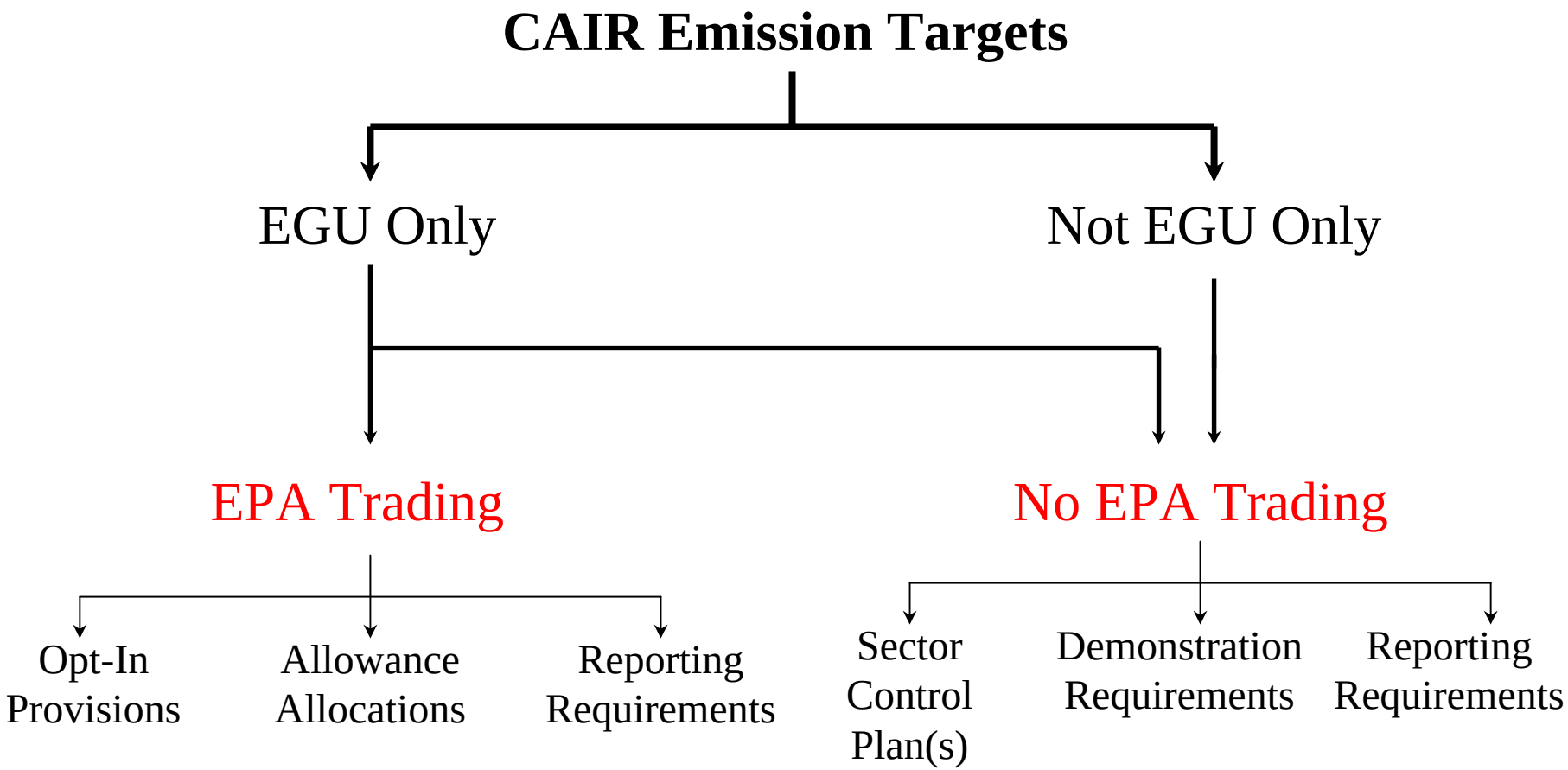
Getting Going

- “Auto SIP approval”
  - Utilizing EPA trading programs can result in automatic approval of CAIR and CAMR SIPs
    - Ex. 51.123(o)(1) and 60.24(h)(6)(i)
- Demonstration Requirements
  - Details provided in CAIR, none in CAMR

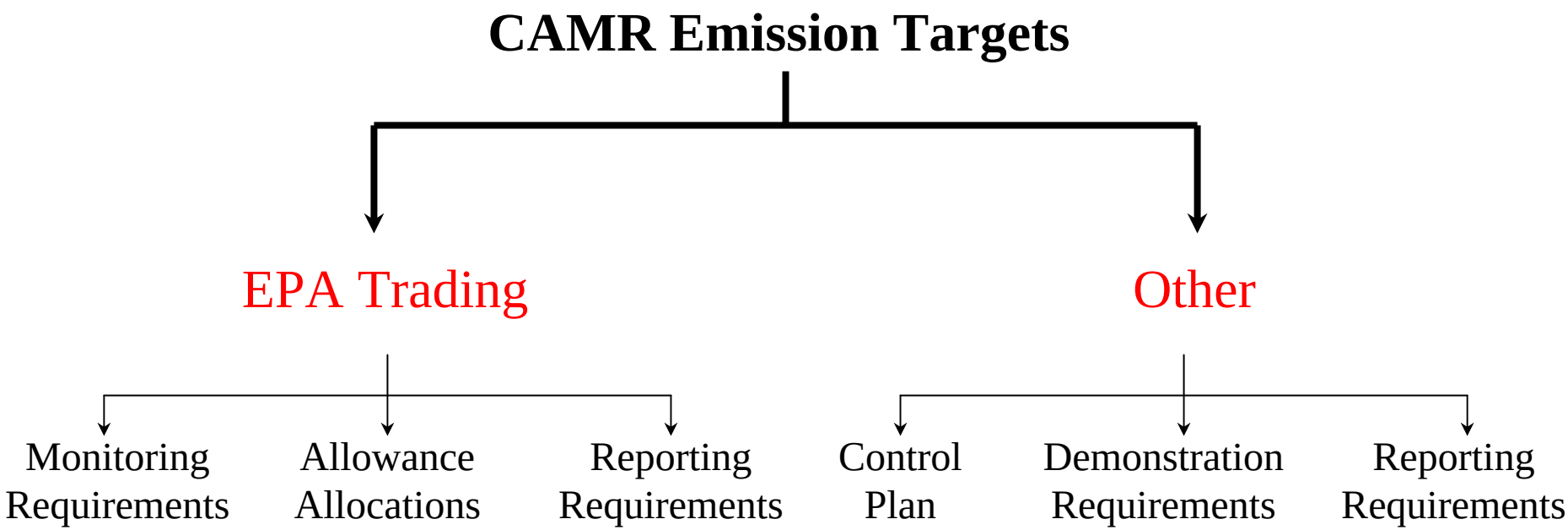
CAIR – EGU Only or Not



CAIR – EPA Trading or Not



CAMR – EPA Trading or Not



Next Steps

- Unresolved issues
- Recommendation write-up volunteers
- Rule aspects for next meeting
- Next meeting
  - Date, time, location